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In the Claims:

1. (Currently Amended) ~~In a process~~ A process for forming dual gate oxides for use in high performance DRAM systems or logic circuits, the improvement process comprising using a shadow area to control gate oxide thickness at active area (AA) corners adjacent a shallow trench isolation (STI) region, the process comprising:

~~I) a. forming an active area by depositing over a semiconductor substrate, a patterned hard mask nitride layer exposing portions of said substrate so as to define an isolation region;~~

~~b. etching exposed portions of said substrate using said patterned hard mask nitride layer to form an isolation trench in the isolation region;~~

~~c. oxidizing said substrate to form a thermal oxide layer in said isolation trench and capacitor trench;~~

~~d. depositing an oxide layer over the thermal oxide layer to fill unfilled portions of said isolation trench;~~

~~e. removing said patterned hard mask nitride layer;~~

~~f. planarizing said substrate and forming a pad nitride strip;~~

~~II) forming a sacrificial gate oxide layer in areas of the semiconductor substrate surface where said pad nitride has been stripped;~~

~~III) affecting channel implants in selected areas using resist masks;~~

providing a substrate having formed thereon an active area and the shallow trench isolation, the shallow trench isolation being filled with an oxide material having an exposed surface protruding above adjacent areas of the substrate; and

IV) affecting a first low dose angled nitrogen implant into the substrate at an angle such that a shadow area is formed adjacent to the oxide material, without using an implant mask to limit the nitrogen dose in the active area to the inner part of the gate area so that the nitrogen dose in the shadow area of the active area is being less than the amount of the nitrogen dose implanted in the remaining non-shadowed area to cause spatial thickness distribution of all exposed oxide

areas;

V) affecting a first mask masking so that nitrogen ions ( $N_2^+$ ) to be implanted do not penetrate the a masked region; and

VI) affecting a second nitrogen ion implantation by employing a second shadow area inducing means at a temperature sufficient to provide a lesser amount of nitrogen ion dosage in ~~the inner part of the gate area so that the angled nitrogen in the~~ second shadow area of the active area is less than the amount of nitrogen dose implanted in the remaining non-shadowed area.

- C1  
Cont.
2. (Currently Amended) The process of claim 1 wherein said second shadow area inducing means is by angled nitrogen ion implantation at an angle either greater or less than  $90^\circ$  with respect to the surface normal of said semiconductor substrate.
  3. (Cancelled)
  4. (Currently Amended) The process of claim 2 further comprising affecting an oxidation of the substrate wherein said oxidation is performed at about  $900^\circ\text{C}$  under dry conditions.
  5. (Currently Amended) The process of claim 2 further comprising affecting an oxidation of the substrate wherein said oxidation is performed at about  $800^\circ\text{C}$  under a combination of dry and wet oxidation conditions.
  6. (Cancelled)
  7. (Cancelled)
  8. (Cancelled)
  9. (Cancelled)
  10. (New) A method of implanting ions comprising:  
  
providing a substrate having a first portion, a second portion, and an active area located between the first portion and the second portion, the first portion and the second portion being a

shallow trench isolation oxide having an exposed surface extending above the surface of the active area;

performing a first ion implantation at a first angle such that a first shaded area defined by the exposed surface of the first portion and the first angle is exposed to fewer ions than a first unshaded area; and

performing a second ion implantation at a second angle such that a second shaded area defined by the exposed surface of the second portion and the second angle is exposed to fewer ions than a second unshaded area.

- C1  
cont.
11. (New) The method of claim 11 wherein the first angle is a positive angle with respect to a first axis perpendicular to a plane formed by a surface of the substrate and wherein the second angle is a negative angle with respect to a first axis perpendicular to a plane formed by a surface of the substrate.
  12. (New) The method of claim 11 wherein the first angle and the second angle are substantially equal in opposing directions.
  13. (New) The method of claim 11 further comprising the step of oxidizing the substrate.
  14. (New) The method of claim 13 wherein the step of oxidizing is performed by a thermal oxidation process.

15. (New) The method of claim 14 wherein the step of oxidizing is performed in an oxygen environment at a temperature of about 800° C.
16. (New) The method of claim 11 wherein the first ion implantation implants nitrogen ions.
17. (New) The method of claim 11 wherein the second ion implantation implants nitrogen ions.
18. (New) A method of implanting ions in an active area comprising:  
providing a substrate having a first raised portion and a second raised portion, the method comprising:  
performing a first ion implanting at a first angle in the active area; and  
performing a second ion implanting at a second angle in the active area;  
wherein the first ion implanting implants substantially less ions in a first shaded area formed by the first angle and the first raised portion than other areas of the active area; and  
wherein the second ion implanting implants substantially less ions in a second shaded area formed by the second angle and the second raised portion than other areas of the active area.
19. (New) The method of claim 18 wherein the first angle is a positive angle with respect to a first axis perpendicular to a plane formed by a surface of the substrate and wherein the second angle is a negative angle with respect to the first axis.
20. (New) The method of claim 18 further comprising the step of oxidizing the substrate.

- C1
21. (New) The method of claim 20 wherein the step of oxidizing is performed by a thermal oxidation process.
22. (New) The method of claim 21 wherein the step of oxidizing is performed in an oxygen environment at a temperature of about 800° C.
23. (New) The method of claim 18 wherein the first ion implantation implants nitrogen ions.
24. (New) The method of claim 18 wherein the second ion implantation implants nitrogen ions.
25. (New) The method of claim 18 wherein the area implanted by the first ion implanting and the area implanted by the second ion implanting overlaps.
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